

155 Corona Avenue
Pelham 65, N. Y.

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Dear Joshua:

I have decided that if I continue to work with K-12 after returning next week to meningococcus, I will stick to the double inhibitor project I have started. I appreciate your offering me such an interesting problem, but I am more interested in my own, in spite of your pessimistic predictions.

I think that, whatever your data (correlation of Lac in duplex colonies) may mean, the phenomenon will eventually have to be checked with a method such as mine, and so I would rather make a little progress toward the better method than just accumulate data by an inadequate method.

Furthermore, I don't understand how the twin correlations could be explained by any ordinary meiotic process. At one point I thought it would be due to linkage with the centromere, but now I don't think so.. You will have to explain to us (Werner and me) why, since selection of the products of meiosis would depend on distribution of the selected loci, lactose should be alike any more often in meiotic twins than in random pairs. If the effect is not produced by ~~xxxx~~ mutation, it would appear to me to indicate something very radically new: perhaps the maltose locus undergoing reduction by itself after a cell is already haploid for lactose and nutritional factors, etc. If we have missed the point, we'll be very appreciative of an explanation.

If resistance to 2 inhibitory agents could be obtained at 3 or 4 loci, my method would recover nearly all recombinants. Even with two, and with a single fermentation difference, all surviving pairs of complementary segregants would be marked. If division is meiotic (or if binucleate diploid cells are formed in any way), a fair proportion of duplex colonies should contain three segregation types, occasionally 4, but of course many would contain 2 non-complementary types, similar to what your method detects. When three products of one pairing can be segregated, it will be possible to recognize 4 strand crossing over if it occurs, and thus to rule out independent crossing over in 2 diploid nuclei (whether produced by 2 binucleate parents or by mitosis in the zygote.)

Tuesday I'm going to go to Cold Spring Harbor to talk with Demerec about inhibitors etc. At present I have 4 second-stage resistant strains, 2 on Iodoacetate and 2 on azide, and tomorrow I will make the crosses to see if any one of them is a double. As long as I don't write, You'll know I'm getting negative results.

Yours,

Gordon